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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,622	09/28/2001	Toshiki Nanya	214503US0	1917

22850 7590 11/07/2002

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EXAMINER	
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ART UNIT	PAPER NUMBER
1756	

DATE MAILED: 11/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

mk-11

Office Action Summary	Application No. 09/964,622	Applicant(s) NANYA ET AL.	
	Examin r Christopher D RoDee	Art Unit 1756	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) 20-25 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-19 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) 1-25 are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 6 8 9 10
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-19, drawn to a toner, developer, and apparatus containing the toner, classified in class 430, subclass 108.22.

II. Claims 20-25, drawn to a method of forming images, classified in class 430, subclass 124.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different process such as forming an electrostatic latent image on a dielectric surface using an ionographic stylus, developing the image with the toner, and fusing the image to the dielectric surface.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Frederick Vastine on 21 October 2002 a provisional election was made with traverse to prosecute the invention of group I, claims 1-19. Affirmation of this election must be made by applicant in replying to this Office action. Claims

20-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Information Disclosure Statement

The information disclosure statement filed 26 December 2001 fails to comply with 37 CFR 1.98(b)(3), which requires identification of the inventor, application number, and filing date; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. The Examiner notes that copies of applications have been submitted with this IDS, but the applications are not identified. It is not possible for the Examiner to determine which applications have been submitted and if these correspond to the applications listed in the IDS.

Claim Objections

Claims 2, 6 and 7 are objected to because of the following informalities: the phraseology in claim 2 is awkward in the phrase of "ratio of said ... monomers to weight of resin negative charge control agent", which is present three times in the claim. Claim 6 appears to be missing the word "a" before "dispersion" and claim 7 appears to be missing the same word before "temperature". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 11, 18, and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 is indefinite because it is unclear if both the phenyl maleimide and phenyl itaconimides are presents as aromatic monomers or if only one of these monomers is required.

Claim 11 is indefinite because a ratio cannot be defined as a percentage by weight. A ratio is a unitless number while the weight percentage has specific units. Clarification is requested.

Claims 18 and 19 are indefinite because the apparatus claim does not have any structure. An apparatus is defined by its structure not the contents of the apparatus (see MPEP 2114 & 2115). Because the apparatus claims do not recite any structure and recite only the contents of the apparatus, which is a material worked upon by the apparatus (i.e., the toner) and does not provide any patentable weight, the claims are indefinite.

Claim Rejections - 35 USC §§ 102 & 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 11-218965.

The Japanese document discloses a toner having a charge controlling resin formed from a sulfonate-group containing monomer, a perfluoroalkyl group-containing acrylate, and an aromatic monomer having a withdrawing group (Abstract; ¶¶ [0010]-[0012]). The sulfonate-group containing monomer is present in an amount of from 1 to 10 % by weight, the perfluoroalkyl group-containing monomer is present in an amount of from 1 to 70 % by weight, and the aromatic group-containing monomer is present in an amount of from 1 to 70 % by weight (¶ [0016]). A resin produced from these monomers has a Mw of from 2000 to 150,000 (¶ [0018]). Note the exemplified charge control resins in ¶¶ [0043]-[0049] as their compositions are particularly pertinent to the instant claims.

The toner also contains a binder resin and a colorant. The binder resin is preferably a polyester having an acid value of from 5 to 30 (¶¶ [0022]-[0026]). The toner can be used as a one-component developer (¶ [0034]).

Claims 1-5, 11, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakanishi *et al.* in US Patent 5,728,501.

Nakanishi discloses a toner comprising a binder resin, a colorant, and a charge control polymer of unsaturated monomers (Abstract; col. 2, l. 11-12). The charge control agent polymer contains monomers having aromatic ring-containing monomers that are substituted with withdrawing groups such as halogen, nitro, or cyano (col. 2, l. 55-59; col. 3, l. 1-23). Other monomers for use in preparation of the polymer include sulfonic acid-containing monomers and perfluoroalkyl acrylate monomers (col. 3, l. 28-33, l. 40, l. 46-54). The polymer has a preferred

weight-average molecular weight of 200 to 200,000 (col. 5, l. 11-16). Exemplified charge control agents include:

Compound (16): A copolymer of 46% by weight of dichlorophenylmaleimide, 50% by weight of perfluoroalkyl (the mixture of C_8-C_{12}) ethyl methacrylate and 4% by weight of styrenesulfonic acid sodium salt (note that this last component is a vinyl aromatic monomer);

Compound (17): A copolymer of 45% by weight of dichlorophenylmaleimide, 50% by weight of perfluoroalkyl (the mixture of C_8-C_{12}) ethyl methacrylate and 5% by weight of styrenesulfonic acid tributylamine salt;

Compound (18): A copolymer of 65% by weight of dichlorophenylitaconimide, 30% by weight of perfluoroalkyl (the mixture of C_8-C_{12}) ethyl acrylate and 5% by weight of styrenesulfonic acid magnesium salt (65/30/5);

Compound (19): A copolymer of 56% by weight of dichlorophenylitaconimide, 40% by weight of perfluoroalkyl (the mixture of C_8-C_{12}) ethyl acrylate and 6% by weight of sulfophenylitaconimide sodium salt; and

Compound (20): A copolymer of 30% by weight of dichlorophenylitaconimide, 64% by weight of perfluoroalkyl (the mixture of C_8-C_{12}) ethyl methacrylate and 6% by weight of sulfophenylitaconimide sodium salt.

See column 9, l. 25-44 as well as Examples A6-A9 and A12.

Suitable toner binders of the composition include polyesters (col. 11, l. 18-19) and epoxy resins formed from polyols (col. 11, l. 20-22). The toner contains the binder resin in an amount of from 30 to 95 % by weight, the charge control polymer in an amount of from 0.1 to 20 % by weight, up to 15 weight percent colorant, and less than 60 weight percent magnetic powder, if

necessary (col. 11, l. 60-67). The toner contains domains of the charge controller dispersed in the binder resin (col. 12, l. 12-13), which have a size of from 0.01 to 4 microns, preferable 0.05 to 2 microns (col. 12, l. 27-34). See Example B3 and Toner T17 where charge control polymer A7 is combined with polyester resin. Also note toner T19 that uses a polyester resin and charge control polymer A12.

The toner of the invention can be used alone as a one-component developer or with a carrier as a two-component developer (col. 12, l. 57-60).

Claims 7-9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakanishi *et al.* in US Patent 5,728,501 or JP 11-218965.

Nakanishi was discussed above. The reference does not specify the temperature where the apparent viscosity of the charge control resin becomes 10^4 Pa, the volatile content in the resin, or the volume resistivity of the resin. It appears that the exemplified resins of Nakanishi inherently have these claimed characteristics because the resins are produced from the monomers disclosed and/or claimed to provide the characteristics required of the instant invention. See spec. p. 14, l. 2-3 & 24, p. 15, l. 10-11 and compare with charge control resin A7.

The JP reference was also discussed above. Like Nakanishi, this reference does not specify the temperature where the apparent viscosity of the charge control resin becomes 10^4 Pa, the volatile content in the resin, or the volume resistivity of the resin. It appears that the exemplified resins of the JP reference inherently have these claimed characteristics because the resins are produced from the monomers disclosed and/or claimed to provide the characteristics required of the instant invention. See spec. p. 14, l. 2-3 & 24, p. 15, l. 10-11.

The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 195 USPQ 430, 433 (CCPA 1977). "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). In the instant fact situation the Examiner has provided scientific reasoning to explain why the characteristics claimed would be inherent in the prior art charge control resin. "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same." *In re Fitzgerald*, 205 USPQ 594, 596 (CCPA 1980).

Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi *et al.* in US Patent 5,728,501.

The Nakanishi reference was described above. The reference is not seen as identically disclosing the claimed dispersion particle size of the charge control resin or the specific weight-average molecular weight. However, the reference does disclose charge control resin domain sizes of from 0.05 to 2 microns and suggests weight-average molecular weights of from 200 to 200,000 for the charge control resin.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use resin domain sizes within the scope of those sizes disclosed by the reference because the artisan would expect such sizes to effectively permit dispersibility as individual domains while providing the desired charging characteristics to the toner. The artisan

would have been expected to use sizes at a specifically disclosed endpoint (e.g., 0.05 microns) to be particularly effective because the artisan specifically considered such a size. The artisan would also have been expected to prepare the charge control resin with a molecular weight within the values disclosed by the reference in order to obtain the proper dispersibility of the resin components.

Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi *et al.* in US Patent 5,728,501 in view of *Handbook of Imaging Materials* to Diamond, pp. 162-165 & 213-216.

Nakanishi was described above. The reference does not specifically disclose a container for the one and two component developers, such as when in an apparatus. The reference also does not disclose a resin coating for the carrier particles.

Diamond states that resin coatings are typically applied to carrier particles to enhance toner charging and to remove adhesion forces of the toner on the carrier surface (p. 213). Diamond also states that the majority of carriers in production today are coated (p. 214).

The Diamond reference also shows containers for one-component developers (Fig. 4.4) and two-component developers (Fig. 4.2). These components are associated with a photoreceptor in an electrophotographic apparatus.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to coat the carrier particles of Nakanishi because Diamond states that the majority of carrier particles are coated to provide necessary triboelectric charge to the toner while avoiding "sticking" of the toner to the carrier. It would also have been obvious to the artisan to place the toner or combination of toner and carrier in a container, such as one

associated with an imaging apparatus, because this is conventional, as shown by Diamond, in order to automate the production of images using a developing device.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 & 45-83 of copending Application No. 10/114056. Although the conflicting claims are not identical, they are not patentably distinct from each other because the toner of the copending claims falls entirely within the scope of the claimed toner noting that a specific polyester resin is claimed in the copending application and the charge control agent has the same components as claimed, particularly sulfonate groups and electron absorbing groups. The artisan would therefore expect the charge control agent of the copending application inherently to be a negative charging component.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher D RoDee whose telephone number is 703 308-2465. The examiner can normally be reached on most weekdays from 6 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703 308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0661.

CHRISTOPHER RODEE
PRIMARY EXAMINER

cdr
November 4, 2002